

Remarks

Claims 33 - 56 are pending. The original claims were subject to a restriction requirement, which is hereby traversed. A new claim set is contained herein. Of this new claim set, claims 33 - 51 are method (process claims) which correlate to claims 1- 19 (Group I); claims 52 to 55 are product claims which correlate with former claims 20 - 31 (Group II); and claim 56 is an apparatus claim which corresponds to former claim 32 (Group III). Applicants provisionally elect the Group II claims, claims 52 to 55, with traverse.

The elected claims pertain to single crystal silicon wafers grown by a modification of the Czochralski technique wherein a heat flux is applied which provides greater heat at the central portion of the bottom of the crystal as opposed to the edges.

All Czochralski crucibles are rotated, and it is not believed possible to produce a useable crystal if only the pulled crystal is rotated. With respect to the crystal, it is noted that the crystal can remain stationary, can be counter-rotated, or iso-rotated, with respect to the direction of crucible rotation. Rotation of the crucible is necessary for several reasons, a principal reason being that uniformity of radial temperature distribution is impossible to achieve in a stationary crucible. When magnetic fields are also used, these also cannot be made completely radially symmetrical, but crucible rotation eliminates the effects of radial asymmetry. Thus, the Examiner's surmise that the crystals of Group II can be prepared by another method where the crucible is not rotated is incorrect, and the restriction must therefore be removed. If the Office believes that crucible rotation is not required, the Office is invited to submit evidence supporting this position.

It is noted that the claims all form part of a single inventive concept, and that in such cases, restriction is rarely warranted.

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Early favorable consideration is respectfully requested.

Respectfully submitted,
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